

WHAT IS CLAIMED IS:

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2 A
3 1. A computer-implemented method of displaying a document using a
4 browser, the method comprising:
5 accessing the document;
6 searching the document to identify text patterns in the document which are
7 relevant to a plurality of concepts;
8 marking locations of the text patterns in the document; and
9 displaying the document using the browser such that the text patterns in
10 the document which are relevant to the plurality of concepts are annotated.
- 1 2. The method of claim 1 wherein the browser is an Internet Explorer
2 browser and the searching and marking use information about the document stored in a
3 Document Object Model configured by the Internet Explorer browser.
- 1 3. The method of claim 1 wherein searching the document comprises:
2 determining text patterns associated with the plurality of concepts; and
3 searching the document to identify text patterns in the document which
4 match the text patterns associated with the plurality of concepts.
- 1 4. The method of claim 1 wherein:
2 the browser is an Internet Explorer browser; and
3 the searching and marking is performed using methods provided by an
4 IHTMLTxtRange interface.
- 1 5. The method of claim 1 wherein:
2 the browser is an Internet Explorer browser; and
3 the searching and marking is performed using methods provided by an
4 IMarkupServices interface.
- 1 6. The method of claim 1 wherein marking the locations of the text
2 patterns in the document comprises inserting annotation tags in front of and after each
3 text pattern identified in the document to be relevant to a concept from the plurality of
4 concepts, wherein the annotation tags for each text pattern identify the concept to which
5 the text pattern is relevant.

1 7. The method of claim 6 wherein displaying the document
2 comprises:
3 for each text pattern identified as being relevant to a concept from the
4 plurality of concepts:
5 determining the concept to which the text pattern is relevant from
6 the annotation tags surrounding the text pattern;
7 determining style information to be used for annotating the text
8 pattern, wherein the style information is associated with the concept to which the text
9 pattern is relevant; and
10 annotating the text pattern based on the style information.

1 8. The method of claim 7 wherein annotating the text pattern
2 comprises highlighting the text pattern in a color indicated by the style information.

1 9. The method of claim 1 further comprising:
2 calculating a score for each concept in the plurality of concepts, the score
3 indicating relevance of the document to the concept; and
4 displaying a relevance indicator for each concept in the plurality of
5 concepts based on the score for the concept.

1 10. The method of claim 9 wherein calculating the score for each
2 concept in the plurality of concepts comprises:
3 for each concept in the plurality of concepts:
4 determining frequency of text patterns in the document identified
5 as being relevant to the concept; and
6 calculating the score based on the frequency of the text patterns.

1 11. A computer-implemented method of displaying a multi-page
2 document using a browser, the method comprising:
3 accessing a multi-page document;
4 displaying a section of the multi-page document in a first viewing area of a
5 display;
6 determining information about the contents of the multi-page document;
7 displaying a thumbnail image in a second viewing area of the display
8 based on the contents information determined from the multi-page document, the

9 thumbnail image displaying the contents of the multi-page document in a continuous
10 form; and
11 emphasizing an area of the thumbnail image corresponding to the section
12 of the multi-page document displayed in the first viewing area.

1 12. The method of claim 11 wherein:
2 determining information about the contents of the multi-page document
3 comprises:
4 determining dimension information for the contents; and
5 determining coordinate information for the contents; and
6 displaying the thumbnail image comprises:
7 displaying the contents in the thumbnail image based on the
8 dimension and coordinate information for the contents.

1 13. The method of claim 12 wherein displaying the contents in the
2 thumbnail image based on the dimension and coordinate information for the contents
3 comprises:
4 for each content:
5 determining position of the content in the thumbnail image by
6 dividing the coordinate and dimension information for the content by a reduction ratio.

1 14. The method of claim 11 wherein determining information about the
2 contents of the multi-page document comprises:
3 determining information about text entities contained in the multi-page
4 document;
5 determining dimension and coordinate information for the text entities;
6 determining if the text entities are relevant to a plurality of concepts; and
7 if a text entity is relevant to a concept in the plurality of concepts:
8 associating the text entity with style information for the concept,
9 the style information indicating a manner of annotating text entities in the multi-page
10 document which are relevant to the concept.

1 15. The method of claim 14 wherein displaying the thumbnail image
2 comprises:

3 if a text entity is relevant to a concept in the plurality of concepts:
4 displaying the text entity in the thumbnail image using the style
5 information for the concept.

1 16. The method of claim 15 further comprising:
2 modifying the style information for a concept;
3 in response to the modification:

4 identifying text entities in the multi-page document which are
5 relevant to the concept; and
6 dynamically changing the display of the identified text entities in
7 the thumbnail image based on the modified style information.

1 17. The method of claim 11 wherein determining information about the
2 contents of the multi-page document comprises:

3 determining information about forms contained in the multi-page
4 document; and
5 determining dimension and coordinate information for the forms.

1 18. The method of claim 11 wherein determining information about the
2 contents of the multi-page document comprises:

3 determining information about image elements contained in the multi-page
4 document; and
5 determining dimension and coordinate information for the image elements.

1 19. A computer-implemented method of displaying a multi-page
2 document using a browser, the method comprising:

3 accessing the multi-page document;
4 searching the multi-page document to identify text patterns in the
5 document which are relevant to a plurality of concepts;
6 marking locations of the text patterns in the document;
7 displaying a section of the multi-page document in a first viewing area of a
8 display such that the text patterns in the multi-page document which are relevant to a
9 plurality of concepts are annotated;

determining information about the contents of the multi-page document;
displaying a thumbnail image in a second viewing area of the display
based on the contents information determined from the multi-page document, the
thumbnail image displaying the contents of the multi-page document in a continuous
form; and
emphasizing an area of the thumbnail image corresponding to the section
of the multi-page document displayed in the first viewing area.

20. A system for displaying a document using a browser, the system comprising:

- a processor; and
- a memory coupled to the processor and configured to store a plurality of modules for execution by the processor, the plurality of modules including:
 - a module for accessing the document;
 - a module for searching the document to identify text patterns in the document which are relevant to a plurality of concepts;
 - a module for marking locations of the text patterns in the document; and
 - a module for displaying the document using the browser such that the text patterns in the document which are relevant to the plurality of concepts are annotated.

21. The system of claim 20 wherein the browser is an Internet Explorer browser and the module for searching and the module for marking use information about the document stored in a Document Object Model configured by the Internet Explorer browser.

22. The system of claim 20 wherein the module for searching the document further comprises:

- a module for determining text patterns associated with the plurality of concepts; and
- a module for searching the document to identify text patterns in the document which match the text patterns associated with the plurality of concepts.

1 23. The system of claim 20 wherein:
2 the browser is an Internet Explorer browser; and
3 the modules for searching and marking use methods provided by an
4 IHTMLTxtRange interface.

1 24. The system of claim 20 wherein:
2 the browser is an Internet Explorer browser; and
3 the modules for searching and marking use methods provided by an
4 IMarkupServices interface.

1 25. The system of claim 20 wherein the module for marking the
2 locations of the text patterns in the document comprises a module for inserting annotation
3 tags in front of and after each text pattern identified in the document to be relevant to a
4 concept from the plurality of concepts, wherein the annotation tags for each text pattern
5 identify the concept to which the text pattern is relevant.

1 26. The system of claim 25 wherein the module for displaying the
2 document comprises:
3 for each text pattern identified as being relevant to a concept from the
4 plurality of concepts:
5 a module for determining the concept to which the text pattern is
6 relevant from the annotation tags surrounding the text pattern;
7 a module for determining style information to be used for
8 annotating the text pattern, wherein the style information is associated with the concept to
9 which the text pattern is relevant; and
10 a module for annotating the text pattern based on the style
11 information.

1 27. The system of claim 26 wherein the module for annotating the text
2 pattern comprises a module for highlighting the text pattern in a color indicated by the
3 style information.

1 28. The system of claim 20 wherein the plurality of modules stored in
2 the memory further comprise:

3 a module for calculating a score for each concept in the plurality of
4 concepts, the score indicating relevance of the document to the concept; and

5 a module for displaying a relevance indicator for each concept in the
6 plurality of concepts based on the score for the concept.

1 29. The system of claim 28 wherein the module for calculating the
2 score for each concept in the plurality of concepts comprises:

3 for each concept in the plurality of concepts:

4 a module for determining frequency of text patterns in the
5 document identified as being relevant to the concept; and

6 a module for calculating the score based on the frequency of the
7 text patterns.

1 30. A system for displaying a multi-page document using a browser,
2 the system comprising:

3 a processor; and

4 a memory coupled to the processor and configured to store a plurality of
5 modules for execution by the processor, the plurality of modules module including:

6 a module for accessing a multi-page document;

7 a module for displaying a section of the multi-page document in a
8 first viewing area of a display;

9 a module for determining information about the contents of the
10 multi-page document;

11 a module for displaying a thumbnail image in a second viewing
12 area of the display based on the contents information determined from the multi-page
13 document, the thumbnail image displaying the contents of the multi-page document in a
14 continuous form; and

15 a module for emphasizing an area of the thumbnail image
16 corresponding to the section of the multi-page document displayed in the first viewing
17 area.

1 31. The system of claim 30 wherein:
2 the module for determining information about the contents of the multi-
3 page document comprises:
4 a module for determining dimension information for the contents;
5 and
6 a module for determining coordinate information for the contents;
7 and
8 the module for displaying the thumbnail image comprises:
9 a module for displaying the contents in the thumbnail image based
10 on the dimension and coordinate information for the contents.

1 32. The system of claim 31 wherein the module for displaying the
2 contents in the thumbnail image based on the dimension and coordinate information for
3 the contents comprises:
4 for each content:
5 a module for determining position of the content in the thumbnail
6 image by dividing the coordinate and dimension information for the content by a
7 reduction ratio.

1 33. The system of claim 30 wherein the module for determining
2 information about the contents of the multi-page document comprises:
3 a module for determining information about text entities contained in the
4 multi-page document;
5 a module for determining dimension and coordinate information for the
6 text entities;
7 a module for determining if the text entities are relevant to a plurality of
8 concepts; and
9 if a text entity is relevant to a concept in the plurality of concepts:
10 a module for associating the text entity with style information for
11 the concept, the style information indicating a manner of annotating text entities in the
12 multi-page document which are relevant to the concept.

1 34. The system of claim 33 wherein the module for displaying the
2 thumbnail image comprises:

3 if a text entity is relevant to a concept in the plurality of concepts:
4 a module for displaying the text entity in the thumbnail image
5 using the style information for the concept.

1 35. The system of claim 34 wherein the plurality of modules stored in
2 the memory further comprise:

3 a module for modifying the style information for a concept;
4 in response to the modification:
5 a module for identifying text entities in the multi-page document
6 which are relevant to the concept; and
7 a module for dynamically changing the display of the identified
8 text entities in the thumbnail image based on the modified style information.

1 36. The system of claim 30 wherein the module for determining
2 information about the contents of the multi-page document comprises:

3 a module for determining information about forms contained in the multi-
4 page document; and
5 a module for determining dimension and coordinate information for the
6 forms.

1 37. The system of claim 30 wherein the module for determining
2 information about the contents of the multi-page document comprises:

3 a module for determining information about image elements contained in
4 the multi-page document; and
5 a module for determining dimension and coordinate information for the
6 image elements.

1 38. A system for displaying a multi-page document using a browser,
2 the system comprising:

3 a processor; and
4 a memory coupled to the processor and configured to store a plurality of
5 modules for execution by the processor, the plurality of modules module including:
6 a module for accessing the multi-page document;

a module for searching the multi-page/document to identify text patterns in the document which are relevant to a plurality of concepts;

a module for marking locations of the text patterns in the document;

a module for displaying a section of the multi-page document in a first viewing area of a display such that the text patterns in the multi-page document which are relevant to a plurality of concepts are annotated;

a module for determining information about the contents of the multi-page document;

a module for displaying a thumbnail image in a second viewing area of the display based on the contents information determined from the multi-page document, the thumbnail image displaying the contents of the multi-page document in a continuous form; and

a module for emphasizing an area of the thumbnail image corresponding to the section of the multi-page document displayed in the first viewing area.

39. A computer program product stored on a computer readable storage medium for displaying a document using a browser, the computer program product comprising:

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code for receiving accessing the document;
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code for searching the document to identify text patterns in the document which are relevant to a plurality of concepts;

code for marking locations of the text patterns in the document; and

code for displaying the document using the browser such that the text patterns in the document which are relevant to the plurality of concepts are annotated.

40. A computer program product stored on a computer readable storage medium for displaying a multi-page document using a browser, the computer program product comprising:

code for accessing a multi-page document;

code for displaying a section of the multi-page document in a first viewing area of a display;

7 code for determining information about the contents of the multi-page
8 document;
9 code for displaying a thumbnail image in a second viewing area of the
10 display based on the contents information determined from the multi-page document, the
11 thumbnail image displaying the contents of the multi-page document in a continuous
12 form; and
13 code for emphasizing an area of the thumbnail image corresponding to the
14 section of the multi-page document displayed in the first viewing area.

1 41. A computer program product stored on a computer readable
2 storage medium for displaying a multi-page document using a browser, the computer
3 program product comprising:
4 code for accessing the multi-page document;
5 code for searching the multi-page document to identify text patterns in the
6 document which are relevant to a plurality of concepts;
7 code for marking locations of the text patterns in the document;
8 code for displaying a section of the multi-page document in a first viewing
9 area of a display such that the text patterns in the multi-page document which are relevant
10 to a plurality of concepts are annotated;
11 code for determining information about the contents of the multi-page
12 document;
13 code for displaying a thumbnail image in a second viewing area of the
14 display based on the contents information determined from the multi-page document, the
15 thumbnail image displaying the contents of the multi-page document in a continuous
16 form; and
17 code for emphasizing an area of the thumbnail image corresponding to the
18 section of the multi-page document displayed in the first viewing area.